

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F16K5/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|------------------------------------|
| X | US 3 192 943 A (MOEN ALFRED M) 6 July 1965 (1965-07-06) | 1-22, 24-26, 28-31 |
| Y | column 2, line 38 -column 5, line 52; figures | 23,27 |
| Y | US 5 730 420 A (TOW JOHN P) 24 March 1998 (1998-03-24) | 23 |
| A | column 2, line 35 -column 2, line 43; figures | 17,22 |
| Y | DE 12 02 596 B (WHITEY RESEARCH TOOL CO) 7 October 1965 (1965-10-07) | 27 |
| A | column 2, line 25 -column 3, line 12; figures | 1,3,4, 7-10, 17-21, 24,28 |
| | -/- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"Z" document member of the same patent family

Date of the actual completion of the international search

24 April 2003

Date of mailing of the international search report

14/05/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Lanel, F-B

INTERNATIONAL SEARCH REPORT

International Application No.

C. JS 03/01351

C.(Continuation) DOCUMENT CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|----------------------------|
| X | US 3 648 723 A (NELSON DONALD R ET AL) 14 March 1972 (1972-03-14) column 1, line 70 -column 2, line 41; claim 1; figures | 1,2, 12-14, 16,29,30 |
| X | US 5 595 206 A (SORIA VEGA SERGIO) 21 January 1997 (1997-01-21) column 2, line 35 -column 5, line 48; figures | 17,19, 22,31, 32,34 |
| A | US 4 685 488 A (CORBIN SUSAN E ET AL) 11 August 1987 (1987-08-11) cited in the application figures | 1 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

Patent Application No

PCT/US 03/01351

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|--|--|
| US 3192943 | A | 06-07-1965 | NONE | |
| US 5730420 | A | 24-03-1998 | NONE | |
| DE 1202596 | B | 07-10-1965 | NONE | |
| US 3648723 | A | 14-03-1972 | DE 2062989 A1 FR 2073889 A5 GB 1286615 A | 24-06-1971 01-10-1971 23-08-1972 |
| US 5595206 | A | 21-01-1997 | NONE | |
| US 4685488 | A | 11-08-1987 | AT 56511 T AU 6797187 A CA 1271107 A1 CN 87100623 A DE 3764813 D1 DK 61787 A EP 0233060 A2 HK 133693 A IE 870313 L JP 62266275 A NO 870424 A ZA 8700565 A | 15-09-1990 13-08-1987 03-07-1990 19-08-1987 18-10-1990 08-08-1987 19-08-1987 10-12-1993 07-08-1987 19-11-1987 10-08-1987 30-09-1987 |